

POPULATION STATUS REPORT
NORTHERN BOBWHITE and RING-NECKED PHEASANT – 2011

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WEATHER SUMMARY

The winter of 2010-2011 was characterized by slightly colder than normal temperatures early in the winter that warmed considerably in late winter. Snowfall amounts were higher than average over most of the state, except the southern portions. A heavy blizzard in February dumped 12-24 inches of snow over the northern two-thirds of the state. Portions of central Missouri reported nearly 53 inches of snow, instead of the average 25 inches. The northern part of the state experienced near average amounts of snowfall. Periods of prolonged snow cover will result in high mortality rates of quail, reducing the number of birds available for breeding in the spring. The spring and summer rainfall of 2011 was quite variable throughout the state. The northern half of the state had the driest spring and summer in the last 3 years, while other parts of the state had much wetter than average weather. Large flood events occurred along the Mississippi and Missouri Rivers this summer, with some affected areas still underwater. Wet springs can hamper nest success and chick survival. Table 1 lists winter snowfall and spring/summer rainfall averages and departures from normal by MDC administrative region. A map of MDC administrative regions is shown in Figure 1a.

TABLE 1. Missouri 2010-2011 winter snowfall and spring/summer rainfall summary.

| | MDC Administrative Regions ¹ | | | | | | | |
|---|---|------|-------|-------|------|------|------|------|
| | NE | NW | C | KC | STL | OZ | SE | SW |
| Winter ² 2010-2011 snowfall (inches) | 41.4 | 31.6 | 53.4 | 23.2 | 21.5 | 8.9 | 9.6 | 19.9 |
| Departure ³ from normal (inches) | +17.4 | +6.2 | +28.0 | +8.6 | +7.7 | +6.9 | -4.8 | +0.4 |
| Spring/Summer ⁴ rainfall (inches) | 23.5 | 20.7 | 30.2 | 31.0 | 22.7 | 29.1 | 30.2 | 19.2 |
| Departure from normal (inches) | +2.7 | -1.1 | +9.6 | +10.3 | +2.0 | +9.1 | +9.6 | -1.6 |

1. Map of MDC Administrative regions shown in Figure 1a.
2. Winter snowfall is the average total for the region from November 1, 2010 through March 31, 2011.
3. Departure calculated from 1971-2000 norms.
4. Spring/summer rainfall is the average total for the region from April 1 through August 31, 2011.

QUAIL ABUNDANCE

Conservation Agents conducted roadside counts of bobwhite quail from August 1-15 in 110 of Missouri's 114 counties. Clay, Jackson, St. Louis, and St. Charles counties are not included because they are high-density urban areas near Kansas City and St. Louis. Surveyors count the number of quail observed while driving \leq 20 miles per hour along permanent 30-mile gravel road routes. Participants are instructed to conduct counts beginning at sunrise on clear, dewy mornings with light winds to increase chances that bobwhites will be near roadsides. These observations are used to provide an index of quail abundance across the landscape. Because only a small portion of each county is sampled, the index best represents quail population trends at large scales, such as statewide and multi-county blocks such as the zoogeographic region. The statewide long-term trend of the index closely follows other statewide indices of abundance including the North American Breeding Bird Survey (BBS) and Missouri quail harvest estimates. The roadside survey routes are located almost entirely through private land, so the quail index is a reflection of conditions on Missouri's private lands.

This year's statewide index of 1.4 quail per 30-mile route is 36% below last year's index of 2.2. This is 52% below the 5-year average (2006-2010) and 56% below the 10-year average (2001-2010) (Table 2). Production appeared to be low this year at the time of the survey with the statewide average chick count at 0.6, which was slightly lower than last year (0.7). Total quail counts were variable among zoogeographic regions with counts being highest in the Western Prairie (2.8), followed by the Northwest Prairie (2.4). Counts were lowest in the Mississippi Lowlands (0.3) and the Northeast Riverbreaks and Western Ozark Border (both at 0.9) (Table 2). Statewide long-term trends (1983-2011) are shown in Figure 2 and trends by zoogeographic region are shown in Figure 3. Both figures illustrate a long-term downward trend in bobwhite populations.

TABLE 2. Average number of quail counted per 30-mile route by Conservation Agents along 106 routes during August 1-15, 2011.

| Zoogeographic Region ¹ | # of Routes In 2011 | Quail counted 2011 | Quail counted 2010 | Long Term Average 1983-2011 | % CHANGE from Long-Term Average | % CHANGE 2010 to 2011 |
|-----------------------------------|---------------------|--------------------|--------------------|-----------------------------|---------------------------------|-----------------------|
| Northwest Prairie | 8 | 2.38 | 1.45 | 7.33 | -67.53% | 63.28% |
| Northern Riverbreaks | 10 | 1.20 | 1.91 | 7.24 | -83.42% | -37.14% |
| Northeast Riverbreaks | 20 | 0.90 | 2.70 | 8.82 | -89.79% | -66.67% |
| Western Prairie | 12 | 2.75 | 2.25 | 14.17 | -80.60% | 22.22% |
| Western Ozark Border | 13 | 0.92 | 1.85 | 6.40 | -85.61% | -50.00% |
| Ozark Plateau | 24 | 1.33 | 2.00 | 2.85 | -53.36% | -33.33% |
| Northern & Eastern Ozark Border | 12 | 1.83 | 2.17 | 2.66 | -31.30% | -15.38% |
| Mississippi Lowlands | 7 | 0.29 | 3.71 | 6.68 | -94.55% | -92.31% |
| Statewide | 106 | 1.42 | 2.20 | 6.87 | -78.74% | -35.68% |

¹See figure 1b.

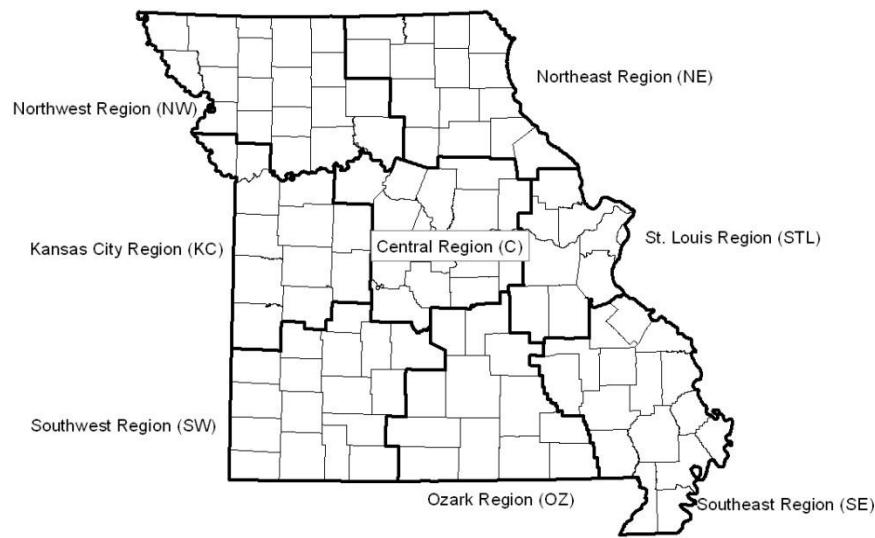


FIGURE 1a. MDC administrative regions.

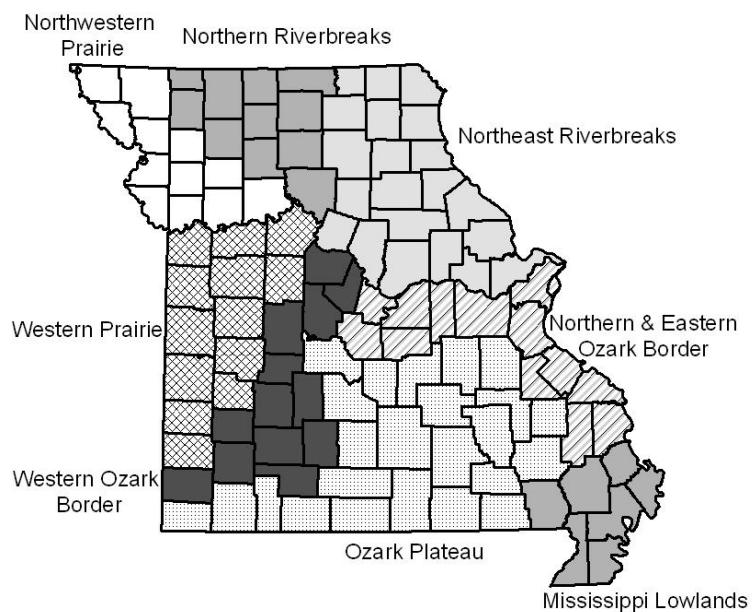


FIGURE 1b. Zoogeographic regions of Missouri.

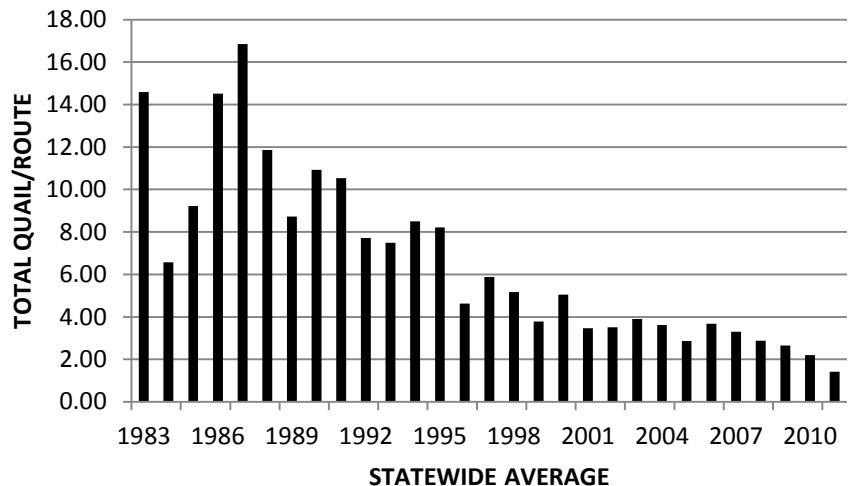
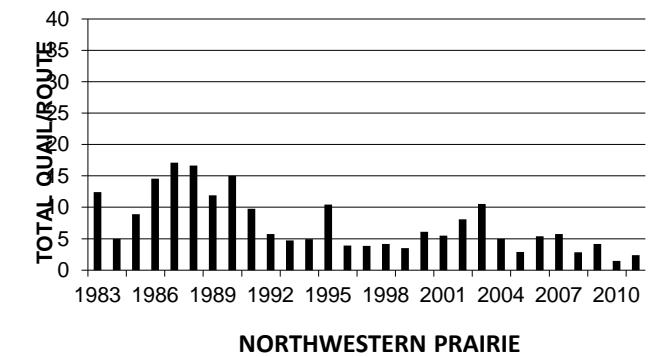
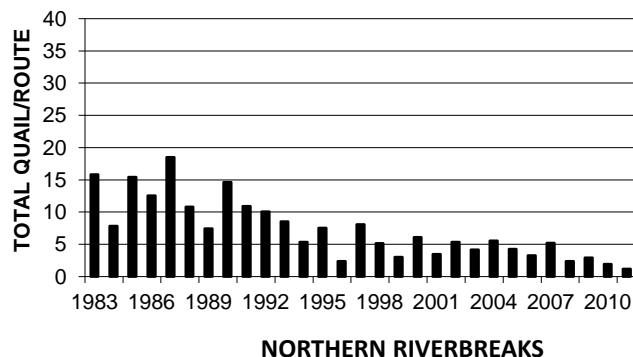


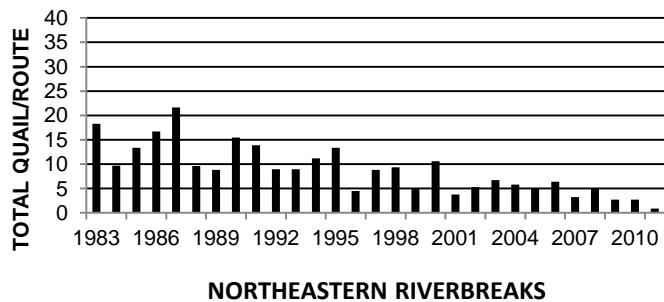
FIGURE 2. Statewide average number of quail counted per route from 1983-2011.



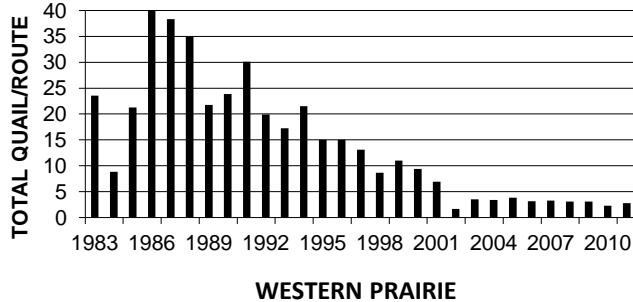
NORTHWESTERN PRAIRIE



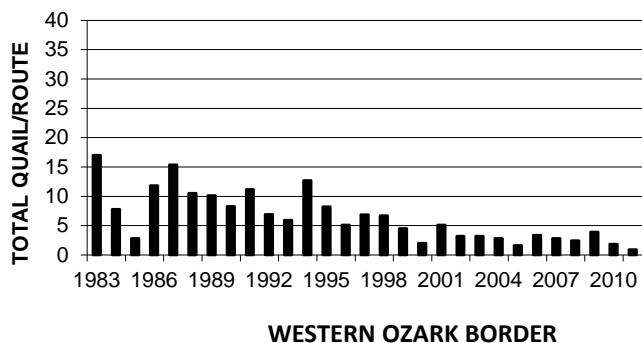
NORTHERN RIVERBREAKS



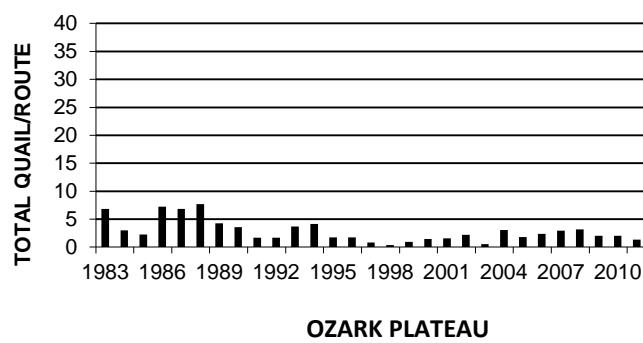
NORTHEASTERN RIVERBREAKS



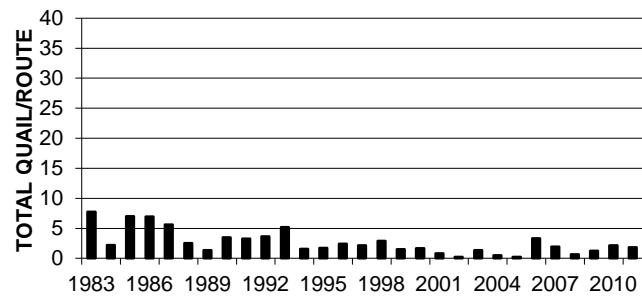
WESTERN PRAIRIE



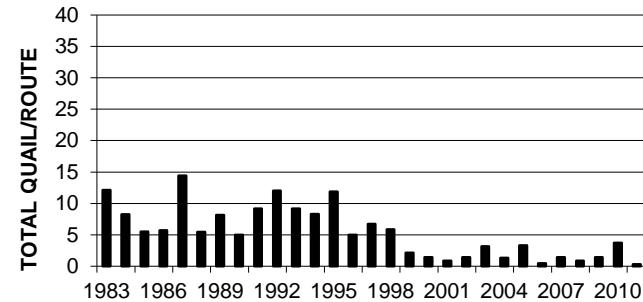
WESTERN OZARK BORDER



OZARK PLATEAU



NORTHERN AND EASTERN OZARK BORDER



MISSISSIPPI LOWLANDS

FIGURE 3. Mean quail per 30-mile route by zoogeographic region from 1983-2011.

2010-2011 HUNTING SEASON

MDC collects harvest information from a post-season mail survey of a random sample of Missouri small game permit holders to estimate hunting activity at regional and statewide scales. The 2010 season (November 1, 2010 to January 15, 2011) again showed a decrease in both the number of quail hunters and quail harvest. The number of quail hunters during the 2010-2011 season was 18,471, which was 14% lower than the 21,459 hunters from the 2008-2009 season. The total number of birds harvested in 2010-2011 was 141,163, a 26% decrease from the 2008-2009 season when hunters harvested 191,172 birds (Figure 4). While the number of hunters and birds harvested continue to decline, the number of birds bagged per day (a statewide index of hunting success) remains relatively stable. The number of birds bagged per day was again 1.4 in 2010, compared to 1.5 in 2008. In the 2010-2011 season, quail hunters averaged 5.6 days afield and had an average season bag of 7.6 birds. Overall hunters spent 103,934 total days afield in 2010-2011.

Missouri Quail Hunting Trends 1967-2010

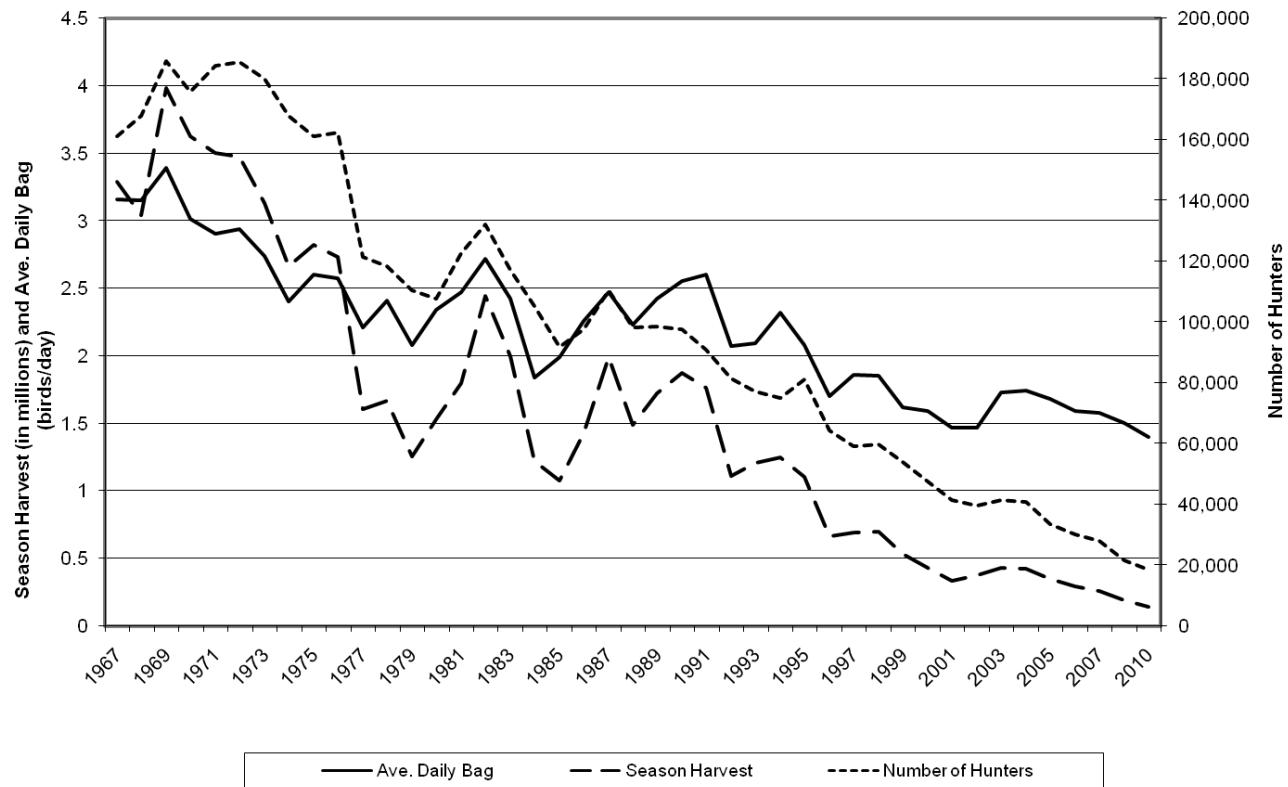


FIGURE 4. Missouri quail hunting trends from 1967-2010. Hunting season bag in millions and daily bag (birds/day) are combined on the left axis. The right axis shows the number of hunters per year.

BOBWHITE HABITAT CONDITIONS

Quail habitat conditions in Missouri vary from good to poor throughout the state. Over-grazing of fescue-dominated pastures, loss of native grass, removal of low growing, dense woody cover, and increased commodity prices have all led to losses in preferred bobwhite habitat. In addition to habitat loss, heavy winter snows hampers bird survival and 3 consecutive wet springs (2008-2010) have impacted production. Wet springs have also increased the rate of vegetative succession, resulting in thick, rank stands of grass and forbs that are unsuitable for bobwhite habitat. The Agents' Roadside Survey provides a snapshot-in-time view of bobwhite numbers throughout the state and is largely reflective of conditions on private lands. Suitable bobwhite habitat continues to decrease statewide as competing land uses such as urban growth, loss of small farms, and loss of rural set-aside acres for agricultural production change our landscape. Over the past 2 years, Missouri has lost nearly 92,000 acres of Conservation Reserve Program (CRP) lands, the majority of which has returned to agricultural production. The loss of rural grassland habitats contributes to the shrinking land base on which bobwhite can thrive.

Providing quality habitat continues to be the best way to increase bobwhite numbers. Many programs are in place to assist private landowners in improving bobwhite habitat on their property, including the USDA Conservation Reserve Program (CRP), Conservation Buffers for Upland Birds (CP 33), MDC landowner assistance programs, and habitat programs from organizations including Quail Unlimited, Quail and Pheasants Forever, and the Quail and Upland Wildlife Federation.

RING-NECKED PHEASANT ABUNDANCE

The Conservation Agents' Roadside Survey measures the number of pheasants observed along 72 standardized 30-mile routes (a subset of the routes sampled for bobwhites) during August 1-15 and provides a reliable predictor of fall pheasant harvest. The 2011 survey showed a continuing decline in Missouri's pheasant population. The 2011 statewide count of 0.30 pheasants per 30-mile route was down 5% compared to 2010, down 68% compared to the previous 5-year average (2006-2010), and 82% lower than the 10-year average (2001-2010; Table 5). By zoogeographic region, counts were highest in the Northwest Prairie (0.65 pheasants per 30-mile route, up 105% compared to 2010). Counts decreased in all other zoogeographic regions. Counts by MDC administrative region are shown in Table 6.

A record low count of pheasants this year is not surprising due to the high snowfall amounts received in the northwestern and northeastern portions and three previous years of heavy rains during the nesting seasons. Iowa also reported record low quail and pheasant counts this year due to heavy winter snows and wet spring weather. Loss of habitat continues to affect open-land species such as quail and pheasants. Acres of CRP land are being returned back to crop production, reducing the opportunity to provide habitat in these areas.

2010-2011 HUNTING SEASON

MDC collects harvest information from a post-season mail survey of a random sample of Missouri small game permit holders to estimate hunting activity at regional and statewide scales. The 2010 season (November 1, 2010 to January 15, 2011) again showed a decrease in both the number of pheasant hunters and pheasant harvest. The number of pheasant hunters during the 2010-2011 season was 6,163, which was a 30% decrease from 8,810 hunters in the 2008-2009 season. The total number of birds harvested in 2010-2011 was 16,254, a 48% decrease from 31,260 harvested in the 2008-2009 season. The number of birds bagged per day was 0.7 in 2010-2011, compared to 0.96 in the 2008-2009 season. In the 2010-2011 season, pheasant hunters averaged 4 days afield and had an average season bag of 2.6 birds. Overall hunters spent 24,873 total days afield in 2010-2011.

Many programs are available to improve habitat for quail and pheasants through USDA Conservation Reserve Program (CRP), Conservation Buffers for Upland Birds (CP 33), MDC programs, and habitat programs from organizations including Quail Unlimited, Quail and Pheasants Forever, and the Quail and Upland Wildlife Federation.

TABLE 5. The number of pheasants observed along 30-mile routes from August 1-15, 2011 by zoogeographic regions (see figure 1b).

| Zoogeographic Regions | 2011 Index | 2-year (2010-2011) % change | 5-year (2006-2010) % change | 10-year (2001-2010) % change |
|-------------------------------|------------|-----------------------------|-----------------------------|------------------------------|
| Northwestern Prairie (17) | 0.65 | 104.9 | -89.1 | -89.7 |
| Northern Riverbreaks (21) | 0.10 | -66.7 | -69.7 | -83.2 |
| Northeastern Riverbreaks (24) | 0.33 | -20.0 | -67.8 | -71.1 |
| Western Prairie (3) | 0 | * | * | * |
| Mississippi Lowlands (5) | 0 | * | * | * |
| STATEWIDE (70) | 0.30 | -4.8 | -68.5 | -82.4 |

*Percent change not computed because of zero in numerator or denominator.

TABLE 6. The number of pheasants observed along 30-mile routes from August 1-15, 2011 by MDC administrative region (see figure 1a).

| MDC Administrative Regions | 2010 Index | 2-year (2010-2011) % change | 5-year (2006-2010) % change | 10-year (2001-2010) % change |
|----------------------------|------------|-----------------------------|-----------------------------|------------------------------|
| Northwest (33) | 0.39 | 67.4 | -89.0 | -91.4 |
| Northeast (26) | 0.31 | -42.9 | -53.7 | -58.4 |
| Kansas City (2) | 0 | * | * | * |
| Central (4) | 0 | * | * | * |
| Southeast (5) | 0 | * | * | * |
| STATEWIDE (70) | 0.30 | -4.8 | -68.5 | -82.4 |

*Percent change not computed because of zero in numerator or denominator.

BOBWHITE AND RING-NECKED PHEASANT HUNTING PROSPECTS

Hunting prospects are poor for pheasants and quail for the 2011-2012 season. Quail and pheasant numbers were highest in the Northwest Prairie zoogeographic region. Areas that have a mix of cropland, native grasses, and shrubby cover provide the best opportunity to hunt for quail and pheasants. MDC maintains 19 Quail Emphasis Areas throughout the state that are managed specifically for quail. These areas can be found at the following website <http://mdc.mo.gov/hunting-trapping/birds/upland-game-birds/quail-emphasis-areas>.

For pheasant hunting, there is a youth-only season in the North zone (counties north of I-70 and the portion of St. Charles County south of I-70) on October 29-30, 2011. It is open to youth ages 6 through 15. Youths who are not hunter-education certified must hunt in the immediate presence of a properly licensed adult; however, the adult may not hunt pheasants. The regular pheasant season in the North zone is November 1, 2011 through January 15, 2012. The daily bag limit is 2 and the possession bag limit is 4. The Southeast zone (Dunklin, New Madrid, Pemiscot, and Stoddard counties) season runs from December 1-12, 2011. The daily bag limit is 1 and the possession bag limit is 1. Because pheasant harvest is limited to males, hunting has little impact on long-term population trends.

There is also a youth-only season for quail on October 29-30, 2011. It is open to youth ages 6 through 15. Youths who are not hunter-education certified must hunt in the immediate presence of a properly licensed adult; however, the adult may not hunt quail. The regular quail season runs from November 1, 2011-January 15, 2012. The daily bag limit is 8 and the possession bag limit is 16.